

CA1
EA 81
-Z 303

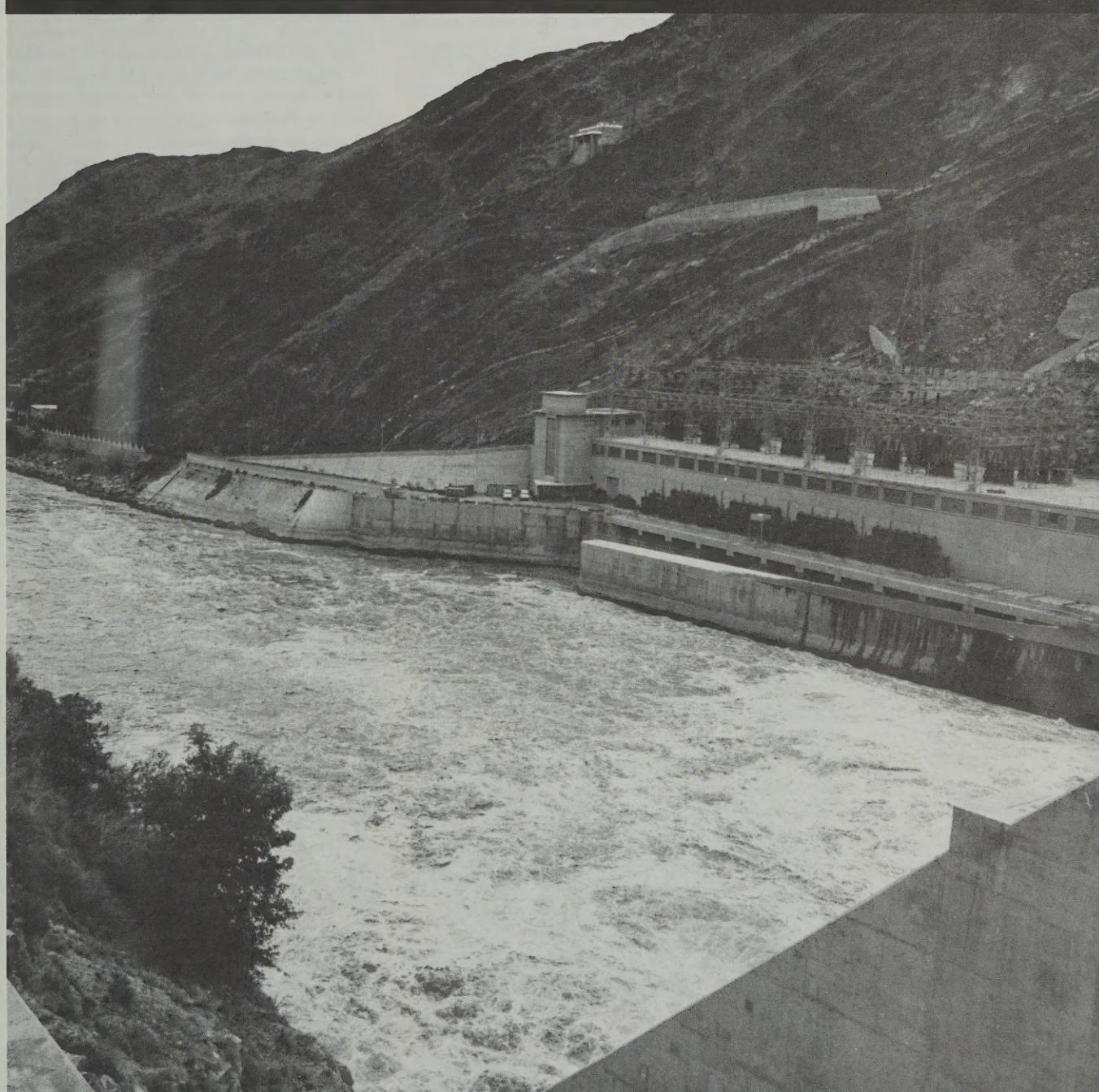
Government
Publications

GOVT

Canadian International
Development Agency

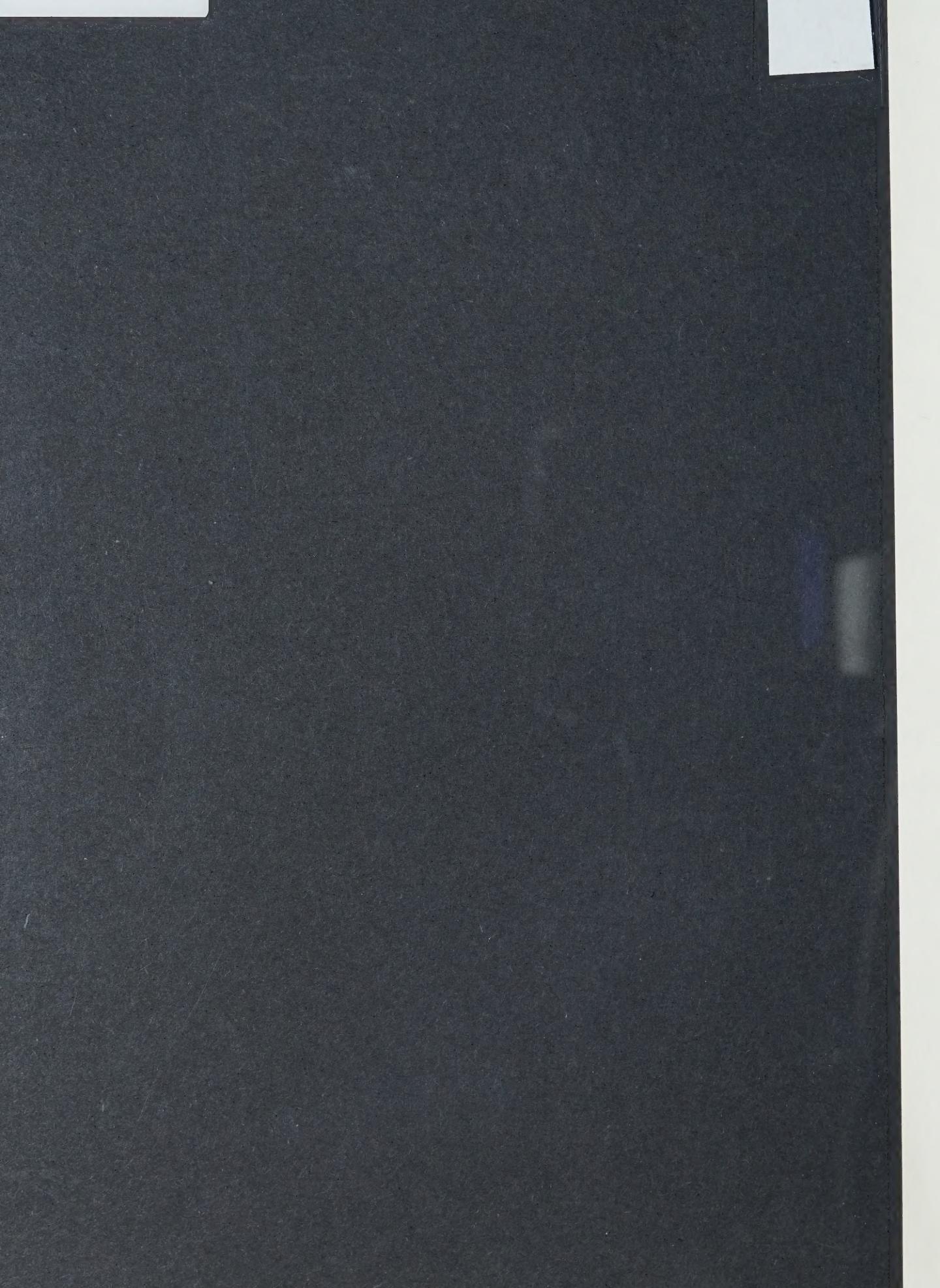
Agence canadienne de
développement international

Energy



(Photo: *Via le monde*)

Canada

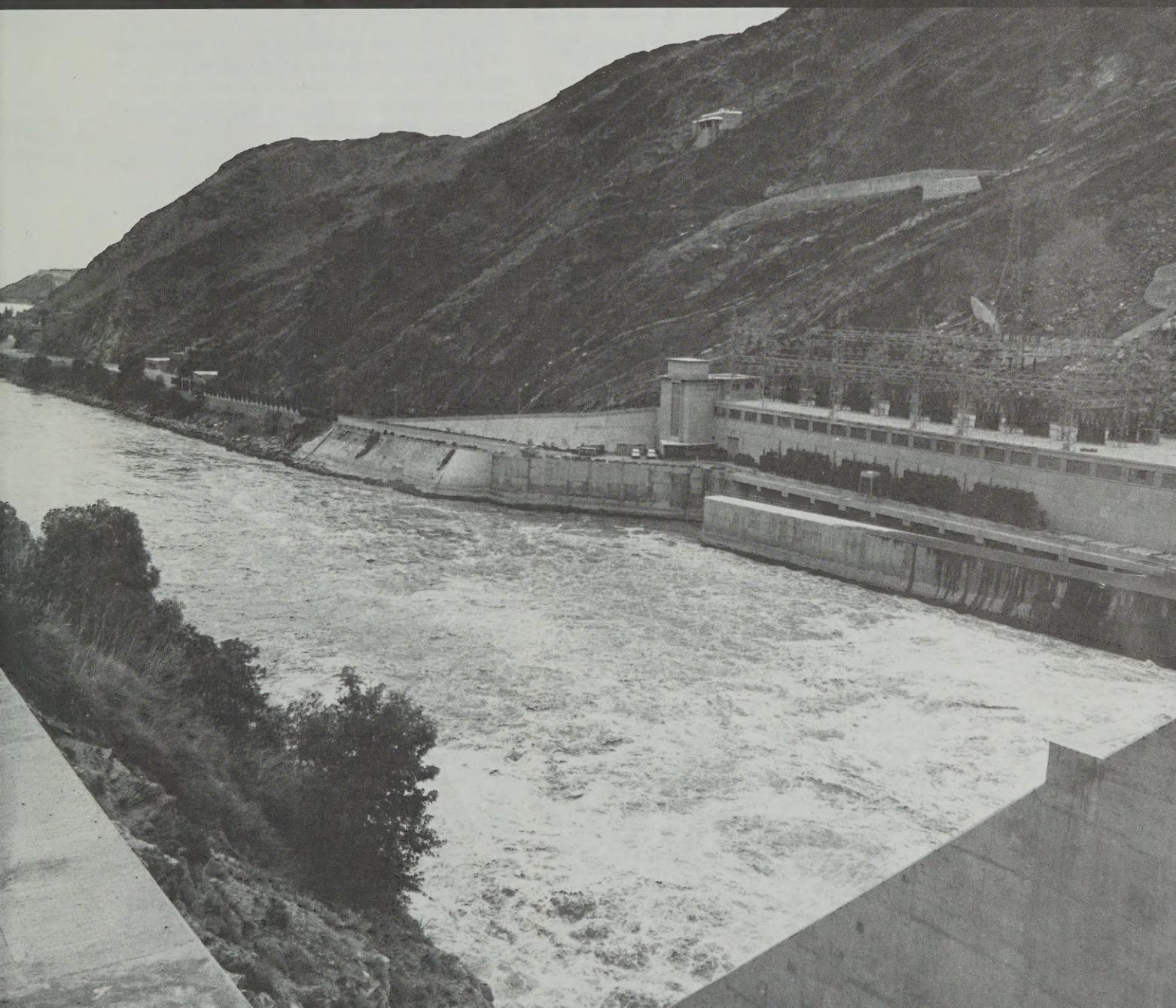


CAI
EA 81
-2303



Canadian International
Development Agency Agence canadienne de
développement international

Energy



(Photo: Via le monde)

Canada

The link between energy and development is very real. Energy resources have the development potential to boost an economy, and energy in all its forms is required to support the social and industrial development of any country.

For these reasons, the Canadian International Development Agency (CIDA) is giving increased attention to energy projects in its program for developing countries. Along with agriculture and the development of human resources, it is a key sector of focus for the agency. In 1980-81, CIDA directed an estimated \$72.5 million to energy projects.

Canada has one of the highest percentages of bilateral assistance devoted to energy among donor countries, with total official development assistance in energy reaching approximately \$700 million in the period 1972-82. Canada coordinates the energy sub-committee of the Organization for Cooperation for Development in Africa (CDA), whose seven member nations meet to exchange project experience for energy development.

The oil price increases in 1973 and again in 1979 had a dramatic impact on the less developed countries, severely affecting their capacity to promote their own development. In 1973, the total official aid being given to these countries from all donors amounted to about U.S. \$10 billion annually. Overnight, the increase in their oil bills offset this assistance and caused extensive balance of payments difficulties.

Canadian financial assistance for energy projects has risen sharply and multilateral agencies such as the World Bank and the regional development banks have more than doubled their energy programs, but much still needs to be done by major donors among the industrialized countries and OPEC members.

CIDA contributes to the energy projects of UN organizations such as the United Nations Development Program and to international financial institutions such as the World Bank and its International Development Association (IDA), the Inter-American Development Bank, the Asian Development Bank and the African Development Fund. For example, CIDA contributed U.S. \$164.6 million to the IDA within the World Bank in 1981-82. The Bank and IDA provided U.S. \$1,982.5 million in loans for energy projects in 1981.

These huge financial undertakings translate into energy programs and projects aimed at helping developing countries to reduce their dependence on

imported energy and allow them to manage their energy sectors better.

Oil and Gas

In oil and gas, since 1960, Canada has provided funds for the purchase of drilling and exploration equipment. It has also provided expertise and equipment to the industry for such work as geological and seismic studies.

CIDA is currently involved in several oil and natural gas projects, such as a \$35.9 million project to explore for oil and gas and provide drilling equipment to Pakistan and \$60 million for the supply of oil and gas equipment and services to India.

In 1970, CIDA funded an aeromagnetic survey carried out in Guyana by a surveying company based in Ottawa, which located a previously unknown trough of interest to oil exploration. Last April, a Calgary-based oil company announced a "significant" discovery in the basin to the great delight of the government of Guyana, an oil importing country.

Until now, the overall coordination of oil and gas exploration programs in developing countries has been done primarily by large oil companies. The newly-formed Petro Canada International (PCI) will assist the less developed countries to explore for oil and gas and reduce their dependence on off-shore supplies. Using aid funds of \$250 million over the next four years, PCI will assist in pre-exploration studies, exploration and technical assistance.

Energy Planning

Energy projects are so expensive that a mistake leading to the selection of the wrong type of project can put a small developing country into serious economic straits. CIDA offers help in energy planning to recipient countries such as Nepal, which has hydro potential equivalent to approximately six dams the size of the one at James Bay. Such assistance provides the framework to attract investment from large lending institutions such as the World Bank.

In Nepal, CIDA is funding a water and hydroelectric resources project which includes a survey to help define investment opportunities, the training of Nepalese counterparts in planning, and improved data collection. The Canadian team's work has led to financing commitments from the World Bank, the Federal Republic of Germany, and others.

Management and personnel training are important aspects of energy development. CIDA-

funded planning seminars in Kuala Lumpur, Malaysia and Blantyre, Malawi have taken the form of workshops to teach energy system planners how to make the most of energy sector investments. Sessions were based on real problems and planners were given textbooks to take back with them as planning tools. Reinforcement of power grids to increase efficiency in electrical systems is an important area of energy management support. CIDA's technical assistance to Egypt, Bangladesh, Kenya and Haiti contributes to their ability to operate and maintain their electrical systems.

Hydroelectric Power

Hydroelectric power is an area of recognized Canadian expertise. It will become increasingly important to developing countries, since nearly two-thirds of the world's conventional hydroelectric potential is in the Third World, though less than 10 per cent of this has been exploited. The largest part of CIDA's financial commitment to energy development is at present in power generation and distribution.

While large hydro projects have been criticized because of their size and cost, they are the epitome of renewable energy and utilize a technology that is readily available. They are multipurpose and can include side-benefits for irrigation, river navigation, fishing industries and tourism. Among other advantages, they provide power for industrialization; they are easy to maintain and operate; they develop the skills of local people as tradesmen and at a professional level; they often aid in flood control, and sometimes assist in the development of a forest industry. These installations last about 60 years and, as well as producing power for industries and cities, they allow villages to gain access to power through rural electrification.

Care must be taken to investigate the environmental impact of these projects, and to ensure that health problems do not arise. Water-carried diseases can easily be transmitted if people who are infected use the new water source created by the dam. People living in areas to be flooded for the dam must be resettled and roads, institutions and facilities rebuilt.

CIDA has contributed a \$35 million loan for engineering consulting and for the purchase of equipment for the nearly completed Kpong Dam project in Ghana. This is a multi-donor project involving the World Bank, the Saudi Fund, the Kuwait Fund, the Arab Bank and the European Economic Community. Approximately 7,000 villagers will be

resettled under a program to rebuild villages, roads, water supply and rural power systems.

CIDA has financed the construction and rehabilitation of high voltage transmission lines in Tanzania, Pakistan, Kenya, Mali, Ivory Coast and Bangladesh. Rural electrification projects are underway in Egypt, Thailand, Ivory Coast, Senegal and Kenya, bringing electricity to villages, often for the first time.

Fuelwood Crisis

Wood is the primary source of energy for much of the developing world. More than 80 per cent of the Third World's 3.4 billion people depend on fuelwood for cooking. Resources are rapidly running out and the situation has reached crisis proportions. Each year, the world's forests shrink by an area approximately the size of Nova Scotia and New Brunswick combined. Depleted forests lead to erosion and desert-like conditions, resulting in a widespread impact on environment and food production.

The solution, in part, is to produce more fuelwood. The aim of the aid community, as announced at the 1981 renewable energy conference in Nairobi, is to attempt to increase reforestation five-fold by the turn of the century. In the next 20 years, 20-25 million hectares will need to be planted.

For most countries, the only alternative to wood in rural areas is power from small hydro installations or agricultural wastes which produce methane gas. Although these methods may be expensive, they can be implemented immediately, and are readily adaptable to the local environment.

Since wood is used mainly for cooking, more efficient stoves and charcoal production can help to stretch remaining reserves of fuelwood while tree-planting programs become established.

Assistance to the grassroots level is often provided effectively by channelling funds through non-governmental organizations. For example, in India, a three-year biogas program will give 200,000 people a cooking alternative. It will be carried out by the Canadian Hunger Foundation and an Indian counterpart agency. Using biogas from decomposing animal dung for cooking, it will save time normally used for collecting firewood, reduce the use of firewood, and cut kerosene consumption. Biogas cooking is smoke-free and only requires the waste of two animals to meet a family's ongoing fuel needs. The slurry (animal waste after decomposition and removal of gas) makes excellent fertilizer

because of its high nitrogen content. The project is sponsored by CIDA (25 per cent), the Indian government (50 per cent) and the users (25 per cent).

New and Renewables

Although Canadian activity in small-scale new and renewable sources of energy has been more limited than in other fields of energy, CIDA intends to expand in this area.

At the United Nations Conference on New and Renewable Sources of Energy in Nairobi in August, 1981, Canada announced several initiatives to be carried out over the next few years. Prime Minister Trudeau announced a program of \$25 million over the next five years through CIDA's Francophone Africa Branch to develop new energy technologies, particularly in the Sahel region; \$10 million over the next four years to Canada's International Development Research Centre for a new program of energy-related research; and \$5 million over five years through CIDA's Industrial Cooperation Division (ICD) for a new Canadian Renewable Energy Facility (CREF). This last program will fund up to 100 per cent of the costs to established Canadian renewable energy companies of testing and adapting their technology

in a Third World setting where there is a commitment to establish a joint venture for the production/assembly of the product concerned.

ICD is an important centre of CIDA activity in new and renewables. In 1980-81, it provided more than \$1 million in support of energy projects undertaken by Canadian companies and their counterparts in developing countries.

Projects supported by ICD include the investigation of joint venture possibilities and potential production of wind generators, solar energy systems, mini-hydro equipment, and methanol and ethanol plant components in several Third World countries, including Jamaica, Egypt, Morocco, Mexico, Costa Rica and Argentina.

ICD will provide funding for pre-feasibility and feasibility studies, and for technology testing, as well as ongoing project support to overcome problems encountered in the Third World.

CIDA also funds a number of energy-related projects undertaken by non-governmental organizations, including courses on solar energy conversion and wind and solar energy, as well as irrigation and reforestation projects.

Version française disponible sur demande

January 1983

Produced by the Public Affairs Branch
Canadian International Development Agency (CIDA)
200 Promenade du Portage
Hull, Quebec
K1A 0G4

Tel.: (819) 997-6100



Digitized by the Internet Archive
in 2022 with funding from
University of Toronto

<https://archive.org/details/31761115519936>

3 1761 11551993 6

